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May 20, 2009

Matthew Hughes, Environmental Engineer  
Wheelabrator Technologies, Inc.  
4 Liberty Lane West  
Hampton, NH 03842

Dear Mr. Hughes:

Thank you for the 2008 Material Separation Plan 4 ("MSP4") Annual Reports. The Massachusetts Department of Environmental Protection ("MassDEP") has reviewed the Wheelabrator Technologies facility reports for Millbury, North Andover and Saugus and has found that the reports include all relevant elements and provide good summaries of your MSP4 programs.

The Wheelabrator reports will be posted on MassDEP's website in the next month along with a summary comparison of MSP results across facilities. We look forward to working with you on the continued implementation of MSP4.

As discussed in our MSP strategy meeting on May 4, 2009, a MSP5 draft for CY10 is due by August 1, 2009. And unlike previous MSPs, MSP5 will be a three year plan.

Sincerely,

Greg Cooper, Deputy Division Director  
Consumer Programs  
Bureau of Waste Prevention

cc: Pat Scanlon, Scanlon Associates

**Material Separation Plan  
For the Diversion of Mercury  
(MSP4, January 1 - December 31, 2008)**

**Annual Report**

**Wheelabrator North Andover Inc.**

**February 2009**

**Wheelabrator North Andover Inc.  
Materials Separation Plan  
Annual Report on the Results of the Mercury Recovery Program**

## **Introduction**

This report presents annual results of Materials Separation Plan (MSP4). It includes activities for the period covering January 1, 2008 to December 31, 2008. The report describes the activities involved in the design, implementation and operation of the Mercury Recovery Program (MRP) in each community. Each MRP is community focused, locally based and operated. Wheelabrator provides all of the technical, logistical and financial support for each program. The corner stone of the MRP Program are the community collection sites. Each community has at least one, often two and in some cases three centrally located and easily accessible locations in the city or town where residents can safely dispose of products that contain mercury.

MRP for 2008 consisted of the following elements:

- Regional Outreach
- Local Outreach / Education
- Mercury Separation and Recycling
- Thermometer Exchange
- Thermostat Recovery
- Thermostat Reimbursement Program
- School Clean Sweeps
- Button-Cell Battery Collection
- Bulk Mercury Collection
- Fluorescent Lamp Reimbursement
- Hardware store collection site development
- Purchase of Sheds for Community Program

Wheelabrator has continued to develop, expand and improve the MRP in each community participating in the program.

- The Regional Outreach coordinated by IWSA placed promotional radio spots in local radio stations in the Spring and Fall. New posters and flyers were distributed to the communities. A new large poster for outdoor use was developed and distributed to the cities and towns. For new communities new educational boards were also developed and distributed to each community.
- The Local Outreach placed four 15 inch advertisements in the local newspapers in each community, promoting the local Mercury Recovery Program, informing residents where they could safely dispose of mercury products in their community. These advertisements are an important aspect of the overall educational and outreach effort.
- The Mercury Separation and Recycling, Local Community Collection Program was continued in each of the participating communities. Each community's collection site(s) is monitored on a regular basis. When the collection pails are full they are serviced promptly by the service provider. The program collects elemental mercury and a wide variety of mercury containing devices including: fever thermometers, lab thermometers, thermostats, mercury switches, sphygmomanometers, button-cell

batteries, barometers and an assortment of miscellaneous mercury containing items. This year a small two-gallon pail was distributed to the cities and towns for the storage of any elemental mercury that may be brought into the collection site.

- Training and education is conducted with personnel at each site on an ongoing and as needed basis.
- The collection of thermostats continues to expand in each community.
- The Thermostat Rebate Program provides economic incentives through a financial reimbursement for plumbing supply businesses to recycle thermostats collected by their customers; plumbers, pipe fitters, electricians etc. This program has worked very well with larger plumbing supply businesses. The number of thermostats collected through this program continues to expand.
- School Clean Sweeps collection program continues to be offered to local school systems on an as needed basis.
- Button-cell batteries continued to be collected utilizing small collection boxes. The Button-cell Battery Reimbursement Program continued to be offered to communities. A few new communities signed up to participate in the program.
- The Fluorescent Lamp Reimbursement Program continues to expand. All categories of fluorescent lamps showed and increase in collection.
- The on-going program providing storage sheds for Universal Waste provided sheds to several communities for the storage of fluorescent lamps and other Universal Waste.

The Mercury Recovery Program has been successful in removing thousands of mercury containing products from the municipal solid waste stream. The Program through its regional and local educational outreach efforts, has contributed to a greater awareness on the part of residents regarding the potential impacts of mercury on human health and the environment. Residents are increasingly aware of where in their community they can safely dispose of mercury and products containing mercury. Resources, such as storage sheds and printed posters and flyers have assisted in increasing community awareness. The program continues to evolve as new approaches encouraging participation in the safe removal of mercury from the waste stream are implemented.

## **1. Regional Outreach**

The Integrated Waste Services Association coordinated the regional education / outreach program for five Massachusetts' waste-to-energy facilities including facilities located in Saugus, North Andover, Millbury, Haverhill, and SEMASS.

Integrated Waste Services Association's activities in support of Massachusetts' Waste-to-Energy Facilities' Materials Separation Plan (MSP4) for 2007 were well received within each community. This following report, prepared by IWSA, describes the activities involved in the design, implementation and operation of IWSA's Program in support of the five waste-to-

energy plants operating in Massachusetts and their Mercury Recovery Programs (MRP). Each facilities' MRP is community focused, locally based and operated; and the IWSA activities are designed to support in a coordinated fashion the MSPs on a regional basis.

## **IWSA's Annual Report on the Results of the Mercury Recovery Program**

### **1. Introduction**

The Integrated Waste Services Association's activities in support of Massachusetts' Waste-to-Energy Facilities' Materials Separation Plan for 2008 continues the direction set in prior years. This report describes the activities involved in the design, implementation and operation of IWSA's Program in support of the five waste-to-energy plants operating in Massachusetts and their Mercury Recovery Programs (MRP). Each facilities' MRP is community focused, locally based and operated; and the IWSA activities are designed to support in a coordinated fashion the MSPs on a regional basis.

IWSA Regional Program activities for 2008 consisted of the following elements:

- Radio Advertising for "Keep Mercury From Rising"
- Evaluation & Analysis of the "Keep Mercury From Rising" campaign
- Revision & Update of Website [www.keepmercuryfromrising.org](http://www.keepmercuryfromrising.org)
- Development and distribution of new print materials to facilities, the public and media

### **2. Regional Education Program "Keep Mercury From Rising"**

The Integrated Waste Services Association coordinated the regional education / outreach program for five Massachusetts' waste-to-energy facilities including facilities located in Saugus, North Andover, Millbury, Haverhill, and West Wareham.

#### **a) Objectives**

In 2008, the Regional Outreach Plan supported individual facility programs by the continued promotion of the media campaign, "Keep Mercury from Rising". This campaign included two waves of radio advertisements designed to reach the broadest possible audience. The campaign used targeted advertising educating the listeners about the concerns related to mercury. The advertisements also encouraged residents to contact their local health departments to receive more information about mercury and find out where in their communities they could dispose of mercury containing devices.

The objectives for 2008 were met and included the following:

- The Regional Outreach Program continued to raise awareness about mercury-containing products in the home and the proper handling and disposal of these products;

- The Program provided information and promote local recycling events;
- The Program continued to build an integrated communications program that leveraged opportunities for incremental, free media, and worked synergistically with the efforts of individual waste-to-energy facilities.

## **b) Tactics**

A public survey was completed in May 2008 measuring the effectiveness of the educational campaign “Keep Mercury From Rising.” Findings from this survey guide the development of the Regional Program. The website, [www.keepmercuryfromrising.org](http://www.keepmercuryfromrising.org), continues to be more user-friendly, and includes more contact information and contractor material, as well as continuing to provide information and assistance with recycling of mercury-containing products to the general public. IWSA produced five videos in 2003 for each waste-to-energy plant, and these videos are available on the website. The videos show the unique and effective programs now in place to keep mercury containing products out of the waste stream.

### **i) Survey**

The effectiveness of the regional education campaign is in large part measured by an annual research survey. The polling is designed to measure positive changes in public attitudes and behaviors, as well as the receptiveness of the message. The survey questionnaire was in the field during May 2008, and consisted of 400 completes, providing a 95% confidence level.

The fragile Massachusetts economy of 2008 took its toll on the thinking and opinions of its residents in this study. We measured dramatic year-over-year increases on issues like unemployment and the state budget, as well as increased expectation/responsibility assigned to government and government agencies when it came to environmental issues.

Respondents continue to say they are willing to pay much more for equivalent non-mercury containing items, despite the failing economy. Despite the faltering economy, mercury awareness continued to climb in key categories – it just was not matched with the associated urgent actions measured in previous years because it appears that consumers have economic challenges on the front burner today.

Fluorescent light bulb awareness has doubled since 2001 (58% vs. 29%) and was up 11 points since last year. For the first time ever, over 60% of all households said they used *several bins* for different types of products (plastic vs. newspaper). Circular wall thermostat awareness continued its climb to 68% awareness vs. 58% in the year 2005. Glass thermometer mercury awareness rebounded to 92% - a five-year high. Fish advisory awareness (86%) also rebounded and was just one point short of its all time high. Owners of mercury

products were given the highest responsibility for safe disposal (4.3 mean), while waste companies (3.5 mean) were assigned the lowest responsibility rating recorded in eight years.

The polling also reflected hard realities in the public's balancing of economic and environmental priorities. Recycling participation (80%) has now fallen for the second year in a row and is down 6 points from its high of 86% in 2006. Urgency to replace a mercury item was replaced by convenience as fewer respondents (48% today vs. 61% in 2006) would immediately stop using a mercury item in the home, if labeled, and would *wait* to replace it, as needed.

## **ii) Advertising**

In 2008, IWSA continued to air the radio spot that was developed in 2007. The new spot capitalizes on the educational outreach in past years and offers listeners a proactive message on what to do with items that contain mercury. Set to a catchy jingle, the advertisement reminds people which products are most likely to contain mercury and "Don't Put Mercury in the Trash!". The advertisement directs listeners to the Keep Mercury From Rising website or their local health departments for more information. The radio spot is available for download on [KeepMercuryFromRising.org](http://KeepMercuryFromRising.org).

IWSA purchased two separate two-week radio buys in 2008 and advertised on radio stations that broadened our geographic outreach. Radio is a targeted medium that provides cost-efficient mass communication and built frequency of message delivery.

The first two-week radio buy was implemented April 21 through May 2, 2008. Markets targeted by the radio buy were Boston, Worcester, New Bedford, and Cape Cod. In order to maximize the dissemination of the message, IWSA purchased another two-week radio buy that aired September 22 through October 3, 2008. Based on the results of the survey conducted after the radio ad, we believe the plan was successful in increasing public awareness.

## **iii) Web-based Tool**

The [www.keepmercuryfromrising.org](http://www.keepmercuryfromrising.org) website was completely redesigned in 2008. The new design is attractive and user-friendly. It provides new and improved information in a manner that will entice the user to explore the site and benefit more from its contents.

The site continues to provide information in the following categories:

Home – includes background on Keep Mercury From Rising and information on calling 1-866-9MERCURY for more information about safe disposal options.

Drop-off sites – provides information on where to drop-off mercury containing items.

Spills – provides a variety of information on actions one should take in the event of a mercury spill.

FAQs/Surveys –provides answers to common questions, as well as information derived from our surveys.

Video – provides the five videos developed by the facilities.

Links – links were proactively sought and added to this page and efforts were made to increase the number of other website that link to <http://www.keepmercuryfromrising.org>.

Media – provides the audio files for past and present radio advertisements as well as pdf files for our new and popular print materials.

#### **iv) Print Materials**

IWSA continues to disseminate the popular print materials developed in 2007 to reinvigorate the regional campaign. The materials include posters identifying items containing mercury and where you can bring those items in for exchange. IWSA also developed an eye-catching handout in the shape of a trash can that opens and discusses the types of mercury containing items that should not be put in the trash. These trash can flyers were extremely popular and demand was high. Tens of thousands of these flyers were printed in 2008 and continue to be very popular in every place that they are used.

#### **Video**

The five-minute “Keep Mercury from Rising” educational video was completed for each facility in 2003. The video explains the need to recycle mercury-containing products and the efforts undertaken by the state of Massachusetts and waste-to energy facilities to reduce the amount of mercury entering the environment.

The video now is being used at the five waste-to-energy facilities for educational purposes during tours and other meetings. Copies of the video have been made available to local cable access television stations and a “B-roll” of visuals and sound is available for media covering MSP events. Copies of the video also have been given to local public officials to be shown at meetings, schools, senior citizen centers, and other organizations that would benefit from viewing the video. As noted above, the video also may be viewed at the website.

#### **c) 2008 Expenditures**



| <b>Activity</b>               | <b>Actual Expenditure</b> |
|-------------------------------|---------------------------|
| <b><i>Survey</i></b>          | <b><i>\$18,000</i></b>    |
| <b><i>Media Buys</i></b>      | <b><i>\$92,410</i></b>    |
| <b><i>Website</i></b>         | <b><i>\$13,925</i></b>    |
| <b><i>Print Materials</i></b> | <b><i>\$18,647</i></b>    |

## **2. Local Outreach / Education**

The local outreach / education effort consisted of several activities with a goal of increasing community awareness concerning mercury. The outreach / educational effort focused on three principles of proper management of mercury and products containing mercury. It identified the environmental and health impacts of mercury, identified products containing mercury and provided instructions on how residents can properly manage and dispose of mercury in their community. These activities consisted of newspaper advertisements, continued use of "Keep Mercury from Rising" video for presentations, educational flyer mailings to contractors, development and distribution of new posters and flyers to the communities and continued local display of the educational boards.

### **a) Newspaper Advertisements**

The Mercury Recovery Program continued to be advertised in local newspapers. This local outreach activity has proven to be an effective method of educating residents about mercury and the need to properly dispose of products that contain mercury. The local program coordinators continue to report that there is an immediate increase in activity after an ad runs in their local newspaper.

The newspaper ads are specific to each community's program. They inform residents of the potential harmful effects of mercury to human health and the environment and instruct residents where they can safely dispose of mercury containing products in their community.

A total of 111 ads were placed in local newspapers promoting the program. Six of the ads did not run for various reasons, usually a problem with the newspaper just not getting it into the paper. The vast majority of the newspapers are weekly publications usually published on Wednesday or Thursday of the week.

Most of the ads were 5" x 5" ads. A total of four ads were planned for each community. Some of the newspaper ads were for multiple communities, such as Hamilton and Wenham and were much larger in size. The ads were placed in the newspapers for the months of April, May, September and October. There were also six additional ads run for Household Hazardous Waste or other special collections. Communities are advised several times throughout the year that these special ads are available but very few communities actually take advantage of this opportunity.

Half of the ads were generic to the program, listing a variety of common products that contain mercury. All of these products could be properly disposed of at the local collection site (s). The ads also informed residents of the on-going thermometer exchange program and encouraged them to exchange their mercury fever thermometer for a new digital thermometer. The other two ads were specific to thermostats, encouraging contractors and residents to properly dispose of these products at the collection site.

There was one special half page ad again this year as part of the special Earth Day insert in the Lowell Sun. This is an annual educational insert encouraging residents to be green with helpful tips for recycling and proper handling of a variety of products plus information on the recycling programs in seven surrounding communities.

**(Attachment #1)**

**b) “Keep Mercury from Rising” Video**

The video that was developed in 2004 continues to be used by local coordinators in promoting the program in their communities when the program is presented to local organizations and schools.

The program coordinator often uses the film as part of presentations to boards of selectman, boards of health and other community groups. The film continues to be made available to local groups, organizations and schools through the Board of Health offices in each community.

Wheelabrator North Andover continues to show the film for educational purposes during tours, trainings and other meetings.

**c) Educational Display Board**

The educational display boards that were distributed to each community in 2002 are still being effectively utilized in the local community outreach campaign. Several of the boards are permanently displayed at the city or town hall. In many communities the boards are periodically displayed and rotated among the local libraries, senior citizen centers, health fairs and town meetings. These boards compliment the other local outreach efforts reinforcing the importance of properly disposing of mercury containing devices. The program coordinator regularly uses the display boards for presentations of the program to boards of selectman, boards of health and other community groups.

New communities received new educational boards mounted on a new thin plastic background. The color of the boards was brightened and they can be used indoor or outdoors. The earlier educational boards could only be used indoors. The coordinators on the newer programs were very thankful to receive such a useful educational tool.

**d) Special Mailing to plumbing contractors in each community**

A special 9 inch by 5 inch postcard (**Attachment #2**) was mailed to each plumbing contractor within the service area. The postcard was black and red and very eye catching. It read, “Attention Contractors, The Massachusetts “Mercury Management

Act” makes it illegal to improperly dispose of Thermostats and other items containing mercury in the trash. Bring Thermostats and other items containing mercury, “Free of Charge” to your local Inspectional Services or Health Department”. A number of contractors have told me that they saw the postcard.

#### **e) Promotional display boards**

Promotional display boards were made for and distributed to each community. The boards were enlarged copies of the new posters made last year (**Attachment #3**). They are on corrugated plastic and can be used indoors or outdoors. All of the promotional posters and educational boards up to now were designed for indoor use. It became apparent that the communities could use a promotional board that could be used for both indoor and outdoor. The boards are two feet by three feet in size. One is green and is specifically for the collection of fluorescent lamps with large pictures of different lamps. The other board is blue and is specifically for the collection of household universal wastes such as thermometers, thermostats, switches and button-cell batteries. Again there are large pictures of each of these items. On the bottom of the board is a large blank area where specific instructions can be written.

Each community received one of each type of display board. If the community was working with their local hardware store in a program to collect fluorescent lamps they received an extra green board for use at the hardware store.

### **3. Mercury Separation and Recycling, Local Community Collection Programs**

The community based collection sites continue to be the cornerstone of the overall Mercury Recovery Program. Each community has at least one; some have two centrally located, easily accessible collection site(s). These sites are typically located at the Board of Health office, Department of Public Works and or the Transfer Station.

***There is a minimum of two five-gallon pails for the collection of mercury containing items at each of these sites. The second pail is the backup and is to be used only after the first pail becomes full. The individual(s) at each site responsible for the daily management of the program have been trained in the proper handling and management of mercury containing products. They have also been trained in the proper clean-up procedures in the case of a spill. Each location has a mercury spill kit and a box of zip-lock plastic bags. Written instructions are on the spill kit itself as well as on each five-gallon pail. Due to the fact that there are frequent changes in personnel, training is reviewed with the staff on an as-needed basis during visits to the collection sites. In most cases some form of training and education takes place on each visit.***

The MRP service provider for 2008 was Enviro Safe / Triumvirate. Enviro Safe was purchased mid-year. There was clearly a new business plan and the decision was made to switch vendors. Complete Recycling Services will be the new vendor as of January 1, 2009.

Attached to each five-gallon pail are two stickers. One sticker contains the program instructions with information about what to do in case of a mercury spill. The other larger sticker identifies the program, lists a few of the representative mercury containing products and gives instructions about what to do when the pail is full. The local program coordinators are instructed to secure the lid and call the 800 telephone number for a pickup. Contractually, the service provider provides pick-up and recycling services for the pail normally within two weeks of being notified.

In the event that a large quantity of elemental mercury is found in a residents home, special arrangements can be made for a pick up to occur at that location. This aspect of the program is referred to as bulk mercury collection. Usually a resident will call the Board of Health about having a bottle or container of mercury. The Board of Health will then contact the program coordinator who will go to the site, examine the mercury, seeing what type of container it is in and in turn calls the service provider for a pickup.

The town of Pepperell was a new participant in the program for 2008. Pepperell has a population of 15,000. The program is operated out of the Board of Health offices and is off to a good start. They have implemented most aspects of the program including the collection of fluorescent lamps and received a storage shed for universal waste.

The towns of Newburyport and Amesbury were expected to begin programs mid-year and preliminary assistance was started. Initial meetings were held and storage pails were left. The towns were still in negotiations and full implementation was halted until there was a signed contract. The contract now takes effect January 1, 2009 and meetings have been scheduled to fully implement the program.

The town of Watertown is not new to the program but it has been without any aspect of the program for five years. The town had a recycling drop-off center where the program was originally located. When that facility closed it was impossible to get a program going in either the Board of Health or the Dept. of Public Works.

With the passage of the Mercury Recovery Act, now wanting to be in compliance with the new regulation, the town showed an interest in starting the program. They now have a new shed for the collection of Universal Waste and have started the full program including collecting fluorescent lamps and is working in cooperation with the local hardware store collecting fluorescent lamps from residents and small businesses.

#### **4. Thermometer Exchange**

The permanent Thermometer Exchange Program continues to be a very popular component of the overall MRP. All of the participating collection locations appreciate the ongoing exchange program and consider the program as an important outreach component for the overall mercury recovery program. The number of 4" fever thermometers collected in 2008 (1,441) was a little more than was collected in 2007 (1,348). But overall the number collected each year remains about at the same level. When a resident comes into the collection location to exchange a mercury thermometer for a new digital thermometer many of the local coordinators use this time to further educate them about mercury and other aspects of the program.

In addition to the fever thermometers thirty-seven lab thermometers were also collected. Twenty-three of these thermometers were over two feet in length. Each community has an ample supply of thermometers. Some of the communities still are giving out older thermometers that were used at the beginning of the program. These supplies of older thermometers are beginning to be replaced with the newer model.

## **5. Thermostat Recovery**

The passage of the Mercury Recovery Act has had a positive impact on the overall quantity of mercury containing products that have been removed from the municipal waste stream. This Act in conjunction with the Mercury Recovery Program's radio spots, mailing to contractors and local newspaper advertisements along with the local promotion of the program with posters and flyers etc. appears to have increased general awareness about mercury in the population and of the need to properly dispose of mercury containing wastes. There has been a distinct increase in the number of thermostats recovered in 2008. This year the Mercury Recovery Program did one mailing to contractors encouraging them to properly dispose of thermostats. This was the same postcard that was sent in 2007. It was sent to the plumbers' address of licensure, normally their home address. There were also ads in the local newspaper specific to thermostats.

In combination, these efforts have resulted in 2,092 thermostats and 195 switches (each equivalent of one thermostat) or a total of 2,271 thermostats recovered. This is over 1,000 more than the number of thermostats collected in 2007 (1,241). Of this total 953 thermostats were recovered through the Thermostat Reimbursement Program.

The thermostat program continues to have the desired effect in removing thermostats from the municipal waste stream and from plumbing supply businesses.

## **6. Thermostat Reimbursement Program**

The Thermostat Reimbursement Program has been in place now for one year and has been fairly successful at one plumbing supply business that has three locations in the service area. As stated above 931 thermostats were recovered, all from Peabody Supply's three locations. This is almost three times the number collected in 2007 (362).

The program is designed to provide plumbers and contractors a financial incentive to properly dispose of thermostats at Plumbing Supply businesses. These businesses are where the majority of thermostats are purchased (points of purchase) and are logical locations for plumbers and contractors to properly dispose of these used devices. A total rebate of \$5.00 per "whole thermostat" was offered to the plumbing supply businesses. A \$3.00 rebate to be paid to plumbers and contractors who brought in thermostats and \$2.00 for to the plumbing supply business for each thermostat recovered. This is proving to be a very successful strategy for recovering thermostats from contractors.

## 7. School Clean Sweeps

The School Clean Sweeps Program in 2008 continued to be offered to school systems for elemental mercury and products containing mercury. The program provides a free service to school systems to inspect chemical storage areas and science laboratories and for the safe removal of elemental mercury and products or devices containing mercury. In addition to the removal service the program also provides replacement products for certain items targeted for removal. Replacement products consisted of lab thermometers, digital barometers and portable and wall mounted sphygmomanometers.

There were no Clean Sweeps follow-up programs conducted in 2008.

## 8. Button Cell Battery Collection

The Button Cell Battery Collection is an on-going effort in each community. Each community has received a supply of small collection boxes for button-cell batteries. They are encouraged to distribute the boxes to targeted businesses and certain community locations for the collection of button-cell batteries. Key locations in any community consist of points of purchase such as drug stores, jewelry stores, hearing aide stores and camera stores. Also community locations such senior citizen centers, health offices and libraries are fairly good locations for the collection of button-cell batteries. With limited resources it is difficult for many communities to distribute and collect the collection boxes. Very often the only collection point is the Board of Health office.

73.46 pounds or approximately 47,041.40 button-cell batteries were collected in 2008. This is nearly double the number collected in 2007 (28,358). The total number collected in 2007 was twice the number collected in 2006. This is certainly a positive trend. The town of Tewksbury collected the most of all the communities with a total of 21.57 pounds. The Lexington HHW site collected 17.00 pounds.

This year there was a total of four communities participating in the Button-cell Battery Reimbursement Program. These four communities accounted for a total of 31.37 pounds of button-cell batteries.

The Button-cell Battery Reimbursement Program can be very successful if properly implemented in a community. The local coordinators are encouraged to identify an interested organization in their community to participate. Once a group has been identified and agrees to participate they receive set-out collection boxes, information as to which locations are best to place the boxes such as drug stores, jewelers, audiologists, senior citizen centers, camera stores etc. At the end of the year all the batteries collected that calendar year are counted and the group receives a payment of \$100.00 per pound up to a maximum of \$500.00 in any given year. The only requirement on the part of the local organization is that they are asked to visit each location on a monthly basis to check on the boxes and remove any button-cell batteries in the boxes and bring them to the collection site.

The local coordinators are reminded about the program and encouraged to find a local group several times throughout the year (**Attachment #4**). All express an interest in finding a group to participate in the program but have a difficult time actually identifying such a group willing

to participate. In 2008 there were a total of four communities participating in the program (Tewksbury, Billerica, Westford, and Arlington).

A total of \$1,365.00 was paid to participating local organizations in 2008. A number of communities have indicated that they may be close to signing up a group to participate in the program for 2009.

## **9. Bulk Mercury Collection**

Each community has been informed that a special collection program is available for elemental mercury. If a large quantity of elemental mercury or devices containing a quantity of mercury is identified in the community, a special pickup of the mercury (or devices) is available. All of the program coordinators are regularly reminded of this special collection service in the event of such a discovery.

In 2008 there were no bulk mercury collections.

## **10. Fluorescent Lamp Reimbursement Program**

There has been a steady increase in the collection of fluorescent lamps over the past several years. All twenty-eight communities have active fluorescent lamp collection programs collecting lamps from municipal buildings and public schools. Last year four of these communities did not have collection programs, these communities all started programs in 2008. Several communities have drop-off areas for residents and small businesses to drop off fluorescent lamps.

### **a) Hardware Stores**

There are twenty-one hardware stores collecting fluorescent lamps in partnership with their community. The towns of Arlington, Belmont and Chelmsford have two hardware stores that participate. Seventeen of the twenty-eight communities have access to a local hardware store participating in the program collecting fluorescent lamps from residents and small businesses. Four of the communities share a local hardware store.

Wilmington and Tewksbury jointly work with the Aubuchon hardware store in Tewksbury. Andover and North Andover jointly work with the Rocky's hardware store in North Andover. Both of these stores are close to the town line and on main streets which make it convenient for both communities to work with them. In both of these locations two towns are working together and sharing the responsibility of servicing the hardware store when its drums are full and are in need of a pickup.

The program is presented as a partnership with the community to remove mercury from the municipal waste stream. The hardware stores are set up as a collection point for the town. When the drums or boxes are full the store calls the town. The DPW then comes and picks up the full drums and leave them empty drums. These lamps are then combined with their regularly collected municipal lamps.

The inclusion of the hardware stores has contributed to a significant increase of the number of fluorescent lamps collected in 2008. All of the programs are working fine with

residents and small businesses providing them with a convenient local place to properly dispose of their fluorescent lamps.

### **b) Results for the Fluorescent Lamp Recovery Program**

In 2008 a total of 199,371 linear feet of fluorescent lamps were collected. This represents an increase of over 25,000 linear feet of lamps being collected as compared to the total for 2007 (173,540). In 2007 there was an increase of 79,000 linear feet over the previous. The quantity of lamps collected continues to increase although it was anticipated that the increase would have been greater than it was.

There has been a significant increase in the number of other types of fluorescent lamps collected in 2008. In 2008, a total of 11,283 different types of fluorescent lamps (compacts, circular, U-shaped, HID and UV lamps from Tanning Salons) were collected as compared to 3,717 in 2007. This represents an increase of 7,566 lamps.

The largest increase in these types of fluorescent lamps clearly was with the compact fluorescent lamps. These popular lamps are just now beginning to show up in the collection stream in ever larger numbers. There were 8,189 compact fluorescent lamps collected as compared to 1,934 collected in 2007. This is more than four times the number collected in the previous year.

With the hardware stores now collecting lamps in partnership with the local communities it is anticipated that the number of these lamps will continue to increase substantially in the coming years.

The majority of these compact lamps are generated in the home. They are sturdy little bulbs that when disposed of in household trash usually will make it to the trash-to-energy facility intact. Most residents are still unaware that these lamps contain mercury. This will be an ongoing challenge to educate the public regarding the proper disposal of these lamps.

Another challenge for the reimbursement program is the high cost of disposing of these lamps. The lowest amount charged by a recycling vendor today is .36 cents per lamp. This compares to .26 cents per four foot straight lamps. The reason for this is that each lamp has to be disassembled by hand as opposed to mechanically with the four foot lamps. There are two vendors that are used by the communities for the disposal of their lamps. The program coordinator has had discussions with each about the need to develop a mechanical process for the processing of these lamps. With the ever increase in the number of these lamps being collected this could be a budget buster in the future. Both companies have informed the program coordinator that they are working on developing such a process.

### **11. Purchase of sheds for the storage of Universal Waste**

The purchase of storage sheds for the storage of fluorescent lamps and other universal waste has been very successful. Having a shed assists the community in establishing a comprehensive fluorescent lamp collection program. The sheds that have been provided to



the communities are of the highest quality and will last for many years. They have proven to be an invaluable asset in facilitating the collection of fluorescent lamps.

Four communities received shed in 2008, these included the towns of: Boxborough, Manchester, Pepperell and Watertown. The towns of Newburyport and Amesbury were scheduled to receive a shed but due to extended contract negotiations the sheds will not be delivered until 2009.

## **12. Program Results**

The total net amount of mercury collected through the Mercury Recovery Program for 2008 weighed 180.88 pounds. This total net amount of mercury is less than 2007 but the total number of mercury containing devices increased in almost every category.

The combined educational / outreach effort including regional radio ads, "Keep Mercury from Rising" video, mailings, flyer distribution, local promotions have all helped raise awareness of the health and environmental concern associated with the improper disposal of mercury and products that contain mercury.

The number of fever and lab thermometers collected increased slightly over what was collected in 2007. The total number of thermometers collected in 2008 was 1,501 compared to a total of 1,348 in 2007. The overall recovery of thermometers has leveled off resulting in a relatively constant participation in the exchange program.

A total of 2,271 thermostats and switches were collected in 2008. This is an increase of over 1,000 thermostats from the 1,241 thermostats and switches collected in 2007.

The new mercury regulation in combination with the mercury regulations passed by the majority of local Boards of Health plus the ongoing educational and outreach programs (mailings, posters, radio and newspaper advertisements) in the communities have all contributed to an increase in the number of thermostats collected. There should be a continued number of these devices collected in coming years.

There were no large bulk collections of elemental mercury in 2008.

Four communities, Boxborough, Manchester, Pepperell and Watertown started fluorescent lamp collection programs for their municipal buildings and schools in 2008. These same four communities received Universal Waste Sheds and there are now a total of seventeen communities working in conjunction with their local hardware stores collecting fluorescent lamps from residents and small businesses.

The total linear feet of fluorescent lamps collected increased to 199,371 from 173,540 for 2007. This represents an increase of over 25,000 linear feet. The number of other fluorescent lamps collected dramatically increased to 8,189 from 3,717 in 2007. The biggest increase was in the compact fluorescent lamps that went from 1,937 in 2007 to 4,757 in 2008. This is an increase of over 2,800 lamps.

If the collected straight fluorescent lamps were placed end to end they would stretch a total of 37.75 miles.

In conclusion, the Mercury Recovery Program continued to operate very successfully in 2008 in all but one of the twenty-eight communities. Although the total net amount of mercury was less than 2007 the number of mercury containing devices collected in every major category other than thermometers saw a substantial increase. The decrease in the overall net mercury recovered is a direct result of the decrease in the amount of elemental mercury that was collected through the program in 2008. The continuing regional and local outreach efforts have been very effective in educating residents about mercury and its potential harm to human health and the environment. It is anticipated that the Mercury Recovery Program will experience continued success in 2009.

## Material Separation Plan - North Andover – Expenses – 2008

|   | <u>Expenses</u>           | <u>Budget</u>             | <u>Balance</u>            |
|---|---------------------------|---------------------------|---------------------------|
| <b>Expenses:</b>  | <b>\$50,871.18</b>        | <b>\$49,000.00</b>        | <b>\$(-1,871.18)</b>      |
| Includes: consultant fees, travel, supplies, office expense |                           |                           |                           |
| <b>Wheelabrator Technologies: Administrative Costs</b>      | <b>\$ 3,500.00</b>        | <b>\$3,500.00</b>         | <b>0</b>                  |
| <b>Wheelabrator North Andover: Administrative Costs</b>     | <b>\$ 5,000.00</b>        | <b>\$5,000.00</b>         | <b>0</b>                  |
| <b>Insurance:</b>   | <b><u>\$ 2,449.37</u></b> | <b><u>\$3,000.00</u></b>  | <b><u>\$ 550.63</u></b>   |
| Includes: Cost of liability and disability insurance        |                           |                           |                           |
| <b>Subtotal Administration Costs</b>                        | <b>[\$61,820.55]</b>      | <b>[\$60,500.00]</b>      | <b>[(-\$1,320.55)]</b>    |
| <b>Regional Outreach (IWSA):</b>                            | <b>\$41,800.00</b>        | <b>\$41,800.00</b>        | <b>0</b>                  |
| Includes: Cost of Regional Outreach Program;                |                           |                           |                           |
| <b>Local Outreach:</b>                                      |                           |                           |                           |
| Newspaper Ads   | \$ 26,333.10              | \$30,000.00               | \$ 3666.90                |
| Special Ads   | \$ 3,080.67               | \$ 6,800.00               | \$ 3,719.33               |
| Educational Boards  | \$ 1,558.69               | \$ 1,000.00               | \$ (-558.69)              |
| <b>Community Collections:</b>                               | <b>\$ 9,202.65</b>        | <b>\$10,000.00</b>        | <b>\$ 797.35</b>          |
| Includes: Cost of collection and sorting                    |                           |                           |                           |
| <b>School Clean Sweeps</b>                                  | <b>\$0</b>                | <b>\$ 500.00</b>          | <b>\$ 500.00</b>          |
| <b>Bulk Collections</b>                                     | <b>\$0</b>                | <b>\$ 500.00</b>          | <b>\$ 500.00</b>          |
| <b>Thermostat Plumbing Supply Pickup Costs</b>              | <b>\$ 3,348.40</b>        | <b>\$ 3,000.00</b>        | <b>\$ (-348.40)</b>       |
| <b>Thermometer Exchange</b>                                 | <b>\$ 2,500.00</b>        | <b>\$ 4,000.00</b>        | <b>\$ 1,500.00</b>        |
| Includes: Cost of new digital thermometers                  |                           |                           |                           |
| <b>Thermostat, Contractor Mailing:</b>                      | <b>\$ 2,846.00</b>        | <b>\$ 4,000.00</b>        | <b>\$ 1,154.00</b>        |
| Includes: Cost of printing and mailing postcards            |                           |                           |                           |
| <b>Fluorescent Lamp Reimbursement:</b>                      | <b>\$16,236.88</b>        | <b>\$14,000.00</b>        | <b>(-\$2236.88)</b>       |
| Includes: Cost of reimbursement to cities and towns         |                           |                           |                           |
| <b>Universal Waste Sheds:</b>                               | <b>\$ 7,138.50</b>        | <b>\$15,400.00</b>        | <b>\$ 8,261.50</b>        |
| <b>Thermostat Reimbursement:</b>                            | <b>\$ 4,765.00</b>        | <b>\$ 4,000.00</b>        | <b>(-\$765.00)</b>        |
| Includes: Reimbursement to plumbing contractors             |                           |                           |                           |
| <b>Button-cell Battery Reimbursement:</b>                   | <b>\$ 1,365.00</b>        | <b>\$ 4,000.00</b>        | <b>\$ 2,635.00</b>        |
| Includes: Cost of reimbursement to community groups         |                           |                           |                           |
| <b>Contingency</b>  | <b><u>\$ 0</u></b>        | <b><u>\$10,000.00</u></b> | <b><u>\$10,000.00</u></b> |
| <b>Subtotal Program Costs</b>                               | <b>[\$120,174.89]</b>     | <b>[\$149,000]</b>        | <b>[\$28,825.11]</b>      |
| <b>TOTAL</b>  | <b>\$181,995.44</b>       | <b>\$209,500.00</b>       | <b>\$27,504.56</b>        |
| <b>Annual Tonnage</b>                                       | <b>449,618</b>            |                           |                           |
| <b>Expenditures, Cents / Ton</b>                            | <b>.404</b>               |                           |                           |